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NTE812 Integrated Circuit Audio Power Amplifier, 1W

Description:

The NTE812 is a monolithic integrated circuit in a 14-Lead DIP type package designed for use in driver and power amplifier applications at frequencies from 50Hz to 40kHz. This device will deliver up to 1W RMS output power into an 8Ω load. The high input impedance and low standby current provide excellent low-power audio output performance for portable applications. The high peak current capability can be utilized for direct driving of complementary power transistors in high power amplifier applications.

Features:

- 1 Watt RMS Power into 8Ω with THD = 0.65% Typ
- Peak Output Current: 1A
- Wide Supply Voltage Range: 4V to 13V
- High Input Impedance

Applications:

- Radios
- Phonographs
- Portable Communications Receivers
- Complementary Power Amplifier Drivers
- Servo Drivers

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Supply Voltage (Note 1), V_{CC}	15V
Output Current, I_O	1A
Continuous Power Dissipation ($T_A \leq +25^\circ\text{C}$, Note 2), P_D	1.1W
Derate Above 25°C	14.7mW/ $^\circ\text{C}$
Operating Ambient Temperature Range, T_{opr}	-55° to $+100^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" from case, 10sec), T_L	$+260^\circ\text{C}$

Note 1. Voltage values are with respect to network GND terminal.

Note 2. This rating is valid for the condition that all pins are soldered into a printed circuit board with a 2" x 2" copper layer area of 14 mil thickness. Most of the heat is conducted to the printed circuit board copper layer through Pin8 (Input GND).

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous RMS Power Output	P_O	THD < 5%, $R_L = 8\Omega$, $f = 1\text{kHz}$	1	-	-	W
Input Voltage	V_{in}	$P_O = 1\text{W}$, $R_L = 8\Omega$, $f = 1\text{kHz}$	-	45	70	mV

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit		
Total Harmonic Distortion	THD	$P_O = 0.05\text{W}$	-	0.6	-	%		
		$P_O = 1\text{W}$		0.65				
Efficiency		$P_O = 1\text{W}$, $R_L = 8\Omega$, $f = 1\text{kHz}$	-	52	-	%		
Cutoff Frequency Lower		Reference $P_O = 1\text{W}$ at 1kHz , $R_L = 8\Omega$	-	50	-	Hz		
			-	40	-	kHz		
Input Impedance	Z_{in}	Reference plane is test circuit input terminal		$R_1 = 100\text{k}\Omega$	80	99	-	$\text{k}\Omega$
				$R_1 = 22\text{k}\Omega$	-	22	-	$\text{k}\Omega$
Output Impedance	Z_{out}	Reference plane is device output terminal				Ω		
Noise Output Level (Unfiltered)		Reference $P_O = 1\text{W}$, Input open	-	-70	-	dB		
Quiescent Output Voltage		No Signal	-	6.2	-	V		
Quiescent Supply Current		No Signal	-	5.5	9.0	mA		

Pin Connection Diagram

